

## STATISTICAL BRIEF #354

January 2012

### **The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2008-2009**

*Steven B. Cohen, PhD and William Yu, MA*

#### **Introduction**

Estimates of health care expenses for the U.S. civilian noninstitutionalized (community) population are critical to policymakers and others concerned with access to medical care and the cost and sources of payment for that care. In 2009, health care expenses among the U.S. community population totaled \$1.26 trillion. Medical care expenses, however, are highly concentrated among a relatively small proportion of individuals in the community population. As reported previously in 1996, the top 1 percent of the U.S. population accounted for 28 percent of the total health care expenditures and the top 5 percent for more than half. More recent data have revealed that over time there has been some decrease in the extent of this concentration at the upper tail of the expenditure distribution (Yu and Ezzati-Rice, 2005).

Using information from the Household Component of the Medical Expenditure Panel Survey (MEPS-HC) for 2008 and 2009, this report provides detailed estimates of the persistence in the level of health care expenditures over time. Studies that examine the persistence of high levels of expenditures over time are essential to help discern the factors most likely to drive health care spending and the characteristics of the individuals who incur them. The MEPS-HC data are particularly well suited for measuring trends in concentration and persistence. All differences between estimates discussed in the text are statistically significant at the 0.05 level unless otherwise noted.

#### **Findings**

In 2008, 1 percent of the population accounted for 20.2 percent of total health care expenditures, and in 2009, the top 1 percent accounted for 21.8 percent of the total expenditures with an annual mean expenditure of \$90,061. The lower 50 percent of the population ranked by their expenditures accounted for only 3.1 percent and 2.9 percent of the total for 2008 and 2009 respectively. Of those individuals ranked at the top 1 percent of the health care expenditure distribution in 2008, 20 percent maintained this ranking with respect to their 2009 health care expenditures (figure 1).

In both 2008 and 2009, the top 5 percent of the population accounted for nearly 50 percent of health care expenditures. Among those individuals ranked in the top 5 percent of the health care expenditure distribution in 2008 (with a mean expenditure of \$35,829), 38 percent retained this ranking with respect to their 2009 health care expenditures (figure 1). Similarly, the top 10 percent of the population accounted for 63.6 percent of overall health care expenditures in 2008 (with a mean expenditure of \$23,992), and 44.8 percent of this subgroup retained this top decile ranking with respect to their 2009 health care expenditures. The data also indicate that a small percentage of the individuals in the top percentiles in 2008 had expenditures for only one year because they died, were institutionalized, or were otherwise ineligible for the survey in the subsequent year.

#### **Highlights**

- In 2008, 1 percent of the population accounted for 20.2 percent of total health care expenditures and 20.0 percent of the population in the top 1 percent retained this ranking in 2009. The bottom half of the expenditure distribution accounted for 3.1 percent of spending in 2008; about three out of four individuals in the bottom 50 percent retained this ranking in 2009.
- Those who were in the top decile of spenders in both 2008 and 2009 differed by age, race/ethnicity, sex, health status, and insurance coverage (for those under 65) from those who were in the lower half in both years.
- Those in the bottom half of health care spenders were more likely to report excellent health status, while those in the top decile of spenders were more likely to be in fair or poor health relative to the overall population.
- While 15.5 percent of persons under age 65 were uninsured for all of 2009, the full-year uninsured comprised 25.9 percent of those in the bottom half of spenders for both 2008 and 2009. Only 3.6 percent of those under age 65 who remained in the top decile of spenders in both years were uninsured for all of 2009.
- Relative to the overall population, those who remained in the top decile of spenders were more likely to be in fair or poor health, elderly, female, non-Hispanic whites and those with public-only coverage. Those who remained in the bottom half of spenders were more likely to be in excellent health, children and young adults, men, Hispanics, and the uninsured.

In both 2008 and 2009, the top 30 percent of the population accounted for nearly 89 percent of health care expenditures. Among those individuals ranked in the top 30 percent of the health care expenditure distribution in 2008, 63.1 percent retained this ranking with respect to their 2009 health care expenditures (figure 1). Furthermore, individuals ranked in the top half of the health care expenditure distribution in 2008 accounted for 97 percent of all health care expenditures. Among this population subgroup, 75.0 percent maintained this ranking in 2009. Alternatively, individuals ranked in the bottom half of the health care expenditure distribution accounted for only 3.1 percent of medical expenditures (with a mean expenditure of \$232 in 2008). Similar to the experience of the top half of the population based on their medical expenditure rankings, 73.9 percent of those in the lower half of the expenditure distribution retained this classification in 2009.

Given the high concentration of medical expenditures incurred by the top decile of the population ranked by health care spending (63.6 percent), identifying the characteristics of those individuals exhibiting significant reductions in health care spending in a subsequent year is also of interest. Among those ranked in the top decile in 2008 based on their high level of medical expenditures, 25.4 percent shifted to a ranking in the lower 75 percent of the expenditure distribution in 2009 (data not shown). Individuals ranked in the lower 75 percent of health care spending accounted for only 14.0 percent of all medical expenditures in 2009.

Individuals who were between the ages of 45 and 64 and the elderly (65 and older) were disproportionately represented among the population that remained in the top decile of spenders for both 2008 and 2009. While the elderly represented 13.2 percent of the overall population, they represented 42.9 percent of those individuals who remained in the top decile of spenders (figure 2). For those individuals who remained in the lower half of the distribution based on health care expenditures over the two-year span, the elderly represented only 2.8 percent of the population. Alternatively, children (0–17) and young adults (18–29) were disproportionately represented among the population that remained in the bottom half of spenders (33.7 percent and 22.9 percent, respectively). In contrast, children and young adults represented only 3.4 percent and 3.1 percent, respectively, of those individuals who remained in the top decile of spenders. Individuals in the top decile ordered by medical expenditures in 2008 that shifted below the first quartile in 2009 were predominantly between the ages of 30–64.

Individuals identified as Hispanic and black non-Hispanic single race were disproportionately represented among the population that remained in the lower half of the distribution based on health care spending. While Hispanics represented 16.0 percent of the overall population in 2009, they represented 24.5 percent of those individuals who remained in the bottom 50 percent of spenders (figure 3). For those individuals who remained in the top decile of spenders, Hispanics represented only 6.7 percent of the population. Individuals in the top decile ordered by medical expenditures in 2008 that shifted below the first quartile in 2009 were more likely to be non-Hispanic whites and other races (77.6 percent) relative to their representation in the overall population (67.2 percent).

Individuals who remained in the top decile of spenders in 2008 and 2009 also differed significantly by sex, compared with those who remained in the lower half of the distribution ranked by medical care expenditures. While females represented 50.9 percent of the overall population, they represented 59.0 percent of those individuals who remained in the top decile of spenders (figure 4). For those individuals who remained in the lower half of the distribution based on health care expenditures over the two-year span, females represented only 41.6 percent of the population. Alternatively, males were disproportionately represented among the population that remained in the bottom half of spenders (58.4 percent). In contrast, males represented only 41.0 percent of those individuals who remained in the top decile of spenders. Individuals in the top decile ordered by medical expenditures in 2008 that shifted below the first quartile in 2009 were predominantly female (56.6 percent).

Health status was a particularly salient factor that distinguished those individuals who remained in the top decile of spenders. Overall, 2.8 percent of the population was reported to be in poor health in 2009, and another 8.0 percent was classified in fair health (figure 5). In contrast, of those individuals who remained in the top decile of spenders, 23.9 percent were in poor health and another 29.6 percent were in fair health. Furthermore, for those individuals remaining in the bottom half of spenders, only 0.4 percent were reported to be in poor health and 4.3 percent in fair health. Individuals in excellent health were disproportionately represented among those who remained in the lower half of spenders both years (43.5 percent). Alternatively, for those individuals remaining in the top decile of spenders, only 6.1 percent were reported to be in excellent health and 13.2 percent in very good health. Individuals in the top decile ordered by medical expenditures in 2008 that shifted below the first quartile in 2009 were predominantly in excellent, very good or good health (24.8, 30.9, and 26.9 percent, respectively).

Focusing on the under age 65 population, health insurance coverage status also distinguished individuals who remained in the top decile of spenders from their counterparts in the lower half of the distribution. Individuals who were uninsured for all of calendar year 2009 were disproportionately represented among the population that remained in the lower half of the distribution based on health care spending. While 15.5 percent of the overall population under age 65 was uninsured for all of 2009, the full-year uninsured comprised 25.9 percent of all individuals remaining in the bottom half of spenders (figure 6). Alternatively, only 3.6 percent of those under age 65 who remained in the top decile of spenders were uninsured. In addition, while 16.6 percent of the overall population under age 65 had public-only coverage for all of 2009, 31.0 percent of those who remained in the top decile of spenders had public-only coverage (figure 6).

With respect to poverty status classifications, 36.2 percent of the overall population resided in families or single-person households with high incomes in 2009 (figure 7). A lower representation of high income individuals (26.5 percent) was observed among those who remained in the lower half of spenders in both 2008 to 2009.

## Data Source

The estimates shown in this Statistical Brief are drawn from analyses conducted by the MEPS staff from the following public use files: MEPS HC-121 and HC-129, 2008 and 2009 Full Year Consolidated Data Files, and MEPS HC-130: Panel 13 Longitudinal Data File.

## Definitions

### *Expenditures*

MEPS-HC defines total expense as the sum of payments from all sources to hospitals, physicians, other health care providers (including dental care), and pharmacies for services reported by respondents in the MEPS-HC. Sources include direct payments from individuals and families, private insurance, Medicare, Medicaid, and miscellaneous other sources.

### *Uninsured*

Individuals who were not covered by any comprehensive private or public health plan during the year were defined as uninsured. People who were covered only by noncomprehensive State-specific programs (e.g., Maryland Kidney Disease Program) or private single service plans (e.g., coverage for dental or vision care only, coverage for accidents or specific diseases) were also considered to be uninsured. Insurance status was defined for calendar year 2009.

### *Age*

Age was defined as age at the end of the year 2009.

### *Race/ethnicity*

Classification by race and ethnicity was based on information reported for each family member. Respondents were asked if each family member's race was best described as American Indian, Alaska Native, Asian or Pacific Islander, black, white, or other. They also were asked if each family member's main national origin or ancestry was Puerto Rican; Cuban; Mexican, Mexicano, Mexican American, or Chicano; other Latin American; or other Spanish. All persons whose main national origin or ancestry was reported in one of these Hispanic groups, regardless of racial background, were classified as Hispanic. Since the Hispanic grouping can include black Hispanic, white Hispanic, Asian and Pacific Islanders Hispanic, and other Hispanic, the race categories of black, white, Asian and Pacific Islanders, and other only include non-Hispanics for the race/ethnicity

classifications. MEPS respondents who reported other single or multiple races and were non-Hispanic were included in the other category. For this analysis, the following classification by race and ethnicity was used: Hispanic (of any race), non-Hispanic blacks single race, non-Hispanic whites single race, and others, and non-Hispanic Asian and Pacific Islanders single race.

#### *Poverty status*

Sample persons were classified according to the total yearly income of their family. Within a household, all people related by blood, marriage, or adoption were considered to be a family. Poverty status categories are defined by the ratio of family income to the federal income thresholds, which control for family size and age of the head of family. Poverty status was based on annual income in 2009.

Poverty status categories are defined as follows:

- Poor: Persons in families with income less than or equal to the poverty line; includes those who had negative income.
- Near poor: Persons in families with income over the poverty line through 125 percent of the poverty line.
- Low income: Persons in families with income over 125 percent through 200 percent of the poverty line.
- Middle income: Persons in families with income over 200 percent through 400 percent of the poverty line.
- High income: Persons in families with income over 400 percent of the poverty line.

#### *Health status*

In every round, the respondent is asked to rate the health of every member of the family. The exact wording of the question is: "In general, compared to other people of (PERSON)'s age, would you say that (PERSON)'s health is excellent, very good, good, fair, or poor?" The health status classification in Round 3 was used for this report, and the small percentage of missing (~1 percent) responses were classified in the good health status category.

### **About MEPS-HC**

MEPS-HC is a nationally representative longitudinal survey that collects detailed information on health care utilization and expenditures, health insurance, and health status, as well as a wide variety of social, demographic, and economic characteristics for the U.S. civilian noninstitutionalized population. It is cosponsored by the Agency for Healthcare Research and Quality and the National Center for Health Statistics.

For more information about MEPS, call the MEPS information coordinator at AHRQ (301) 427-1406 or visit the MEPS Web site at <http://www.meps.ahrq.gov/>.

### **References**

Cohen, J. *Design and Methods of the Medical Expenditure Panel Survey Household Component*. MEPS Methodology Report No. 1. AHCPR Pub. No. 97-0026. Rockville, MD: Agency for Healthcare Policy and Research, 1997. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/mr1/mr1.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr1/mr1.pdf)

Cohen, S. Design Strategies and Innovations in the Medical Expenditure Panel Survey. *Medical Care*, July 2003: 41(7) Supplement: III-5-III-12.

Cohen, S. and Yu, W. *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2007-2008*. Statistical Brief #309. December 2010. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st309/stat309.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st309/stat309.pdf)

Cohen, S. and Yu, W. *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2006-2007*. Statistical Brief #278. March 2010. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st278/stat278.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st278/stat278.pdf)

Cohen, S. and Yu, W. *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2005-2006*. Statistical

Brief #236. February 2009. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st236/stat236.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st236/stat236.pdf)

Cohen, S. and Yu, W. *The Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2004–2005*. Statistical Brief #191. November 2007. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st191/stat191.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st191/stat191.pdf)

Ezzati-Rice, T. M., Rohde, F., Greenblatt, J. *Sample Design of the Medical Expenditure Panel Survey Household Component, 1998–2007*. Methodology Report No. 22. March 2008. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/mr22/mr22.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/mr22/mr22.pdf)

Yu, W. and Ezzati-Rice, T. *Concentration of Health Care Expenditures in the U.S. Civilian Noninstitutionalized Population*. Statistical Brief #81. May 2005. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st81/stat81.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st81/stat81.pdf)

### Suggested Citation

Cohen, S. and Yu, W. *The Concentration and Persistence in the Level of Health Expenditures over Time: Estimates for the U.S. Population, 2008–2009*. Statistical Brief #354. January 2012. Agency for Healthcare Research and Quality, Rockville, MD. [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/st354/stat354.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/st354/stat354.pdf)

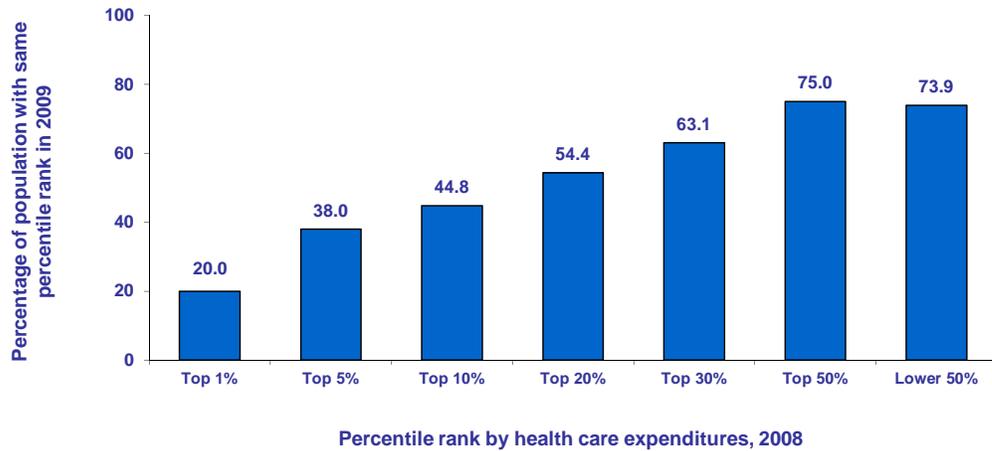
\* \* \*

AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other MEPS data and tools and to share suggestions on how MEPS products might be enhanced to further meet your needs. Please email us at [MEPSProjectDirector@ahrq.hhs.gov](mailto:MEPSProjectDirector@ahrq.hhs.gov) or send a letter to the address below:

Steven B. Cohen, PhD, Director  
Center for Financing, Access, and Cost Trends  
Agency for Healthcare Research and Quality  
540 Gaither Road  
Rockville, MD 20850



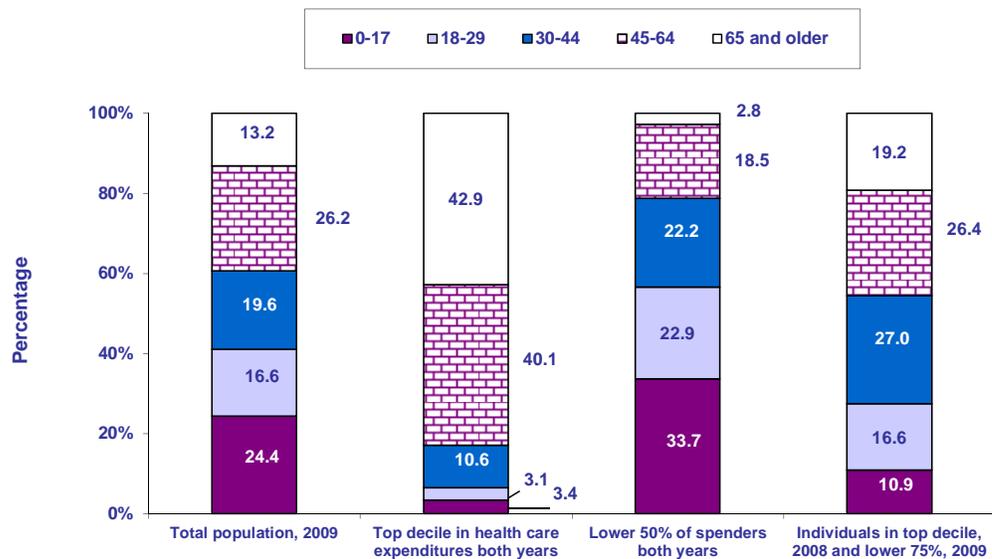
**Figure 1. Persistence in the level of health care expenditures, U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



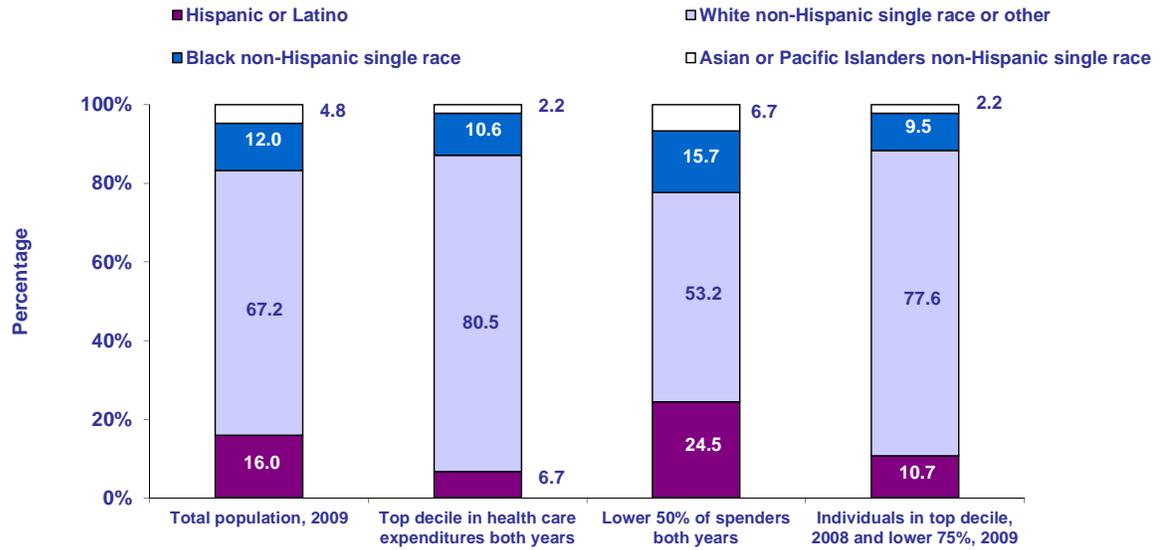
**Figure 2. Distribution of population by persistence of health care expenditures and age, in the U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



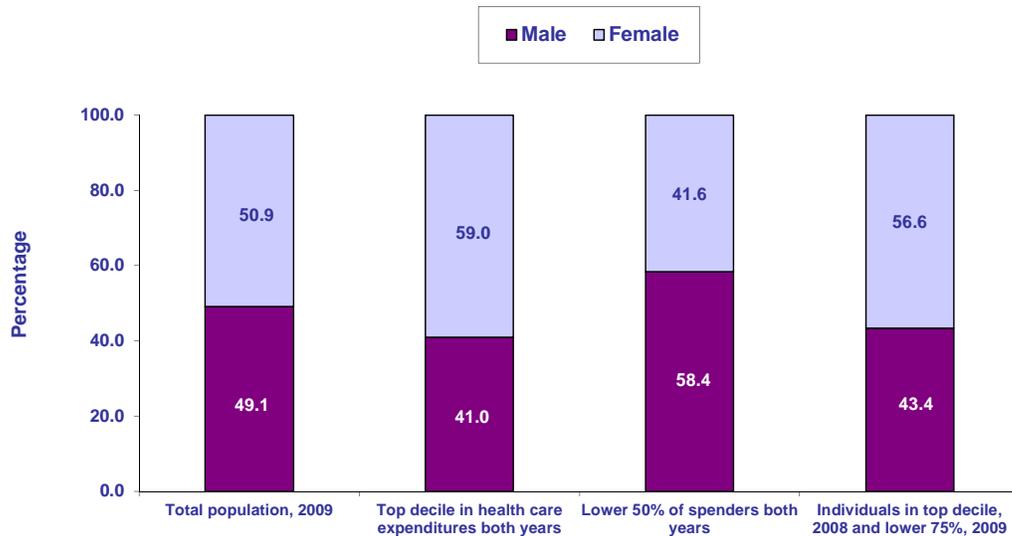
**Figure 3. Distribution of population by persistence of health care expenditures and race/ethnicity, U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



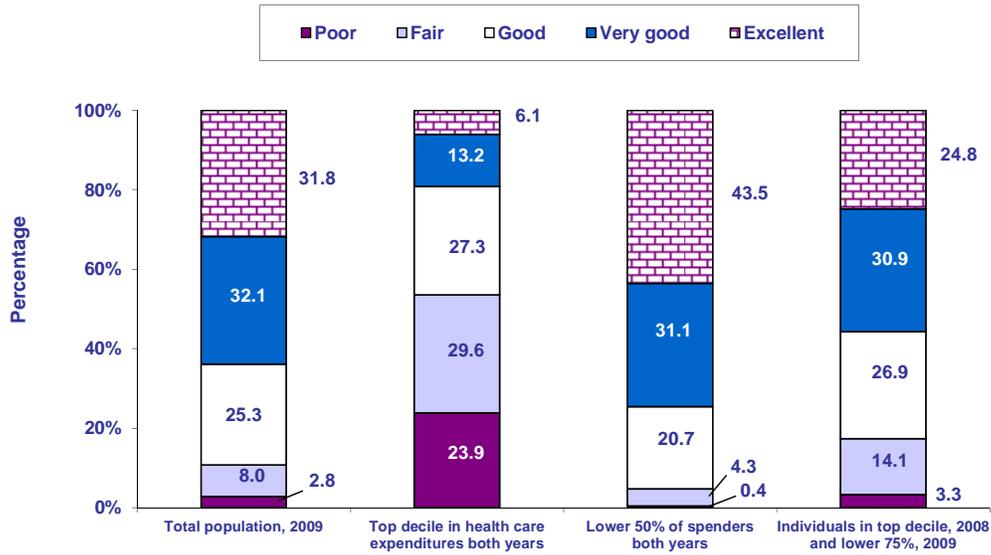
**Figure 4. Distribution of population by persistence of health care expenditures and sex, in the U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



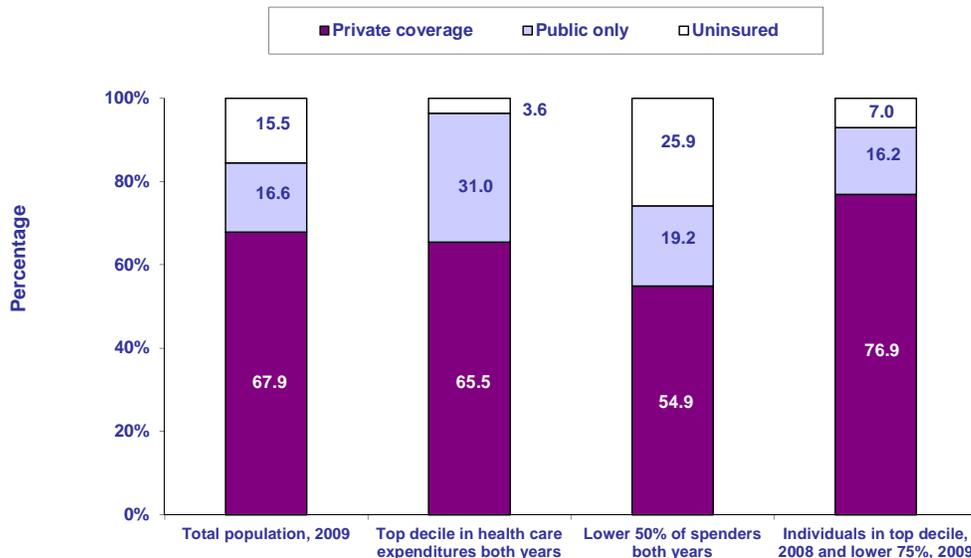
**Figure 5. Distribution of population by persistence of health care expenditures and health status, in the U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



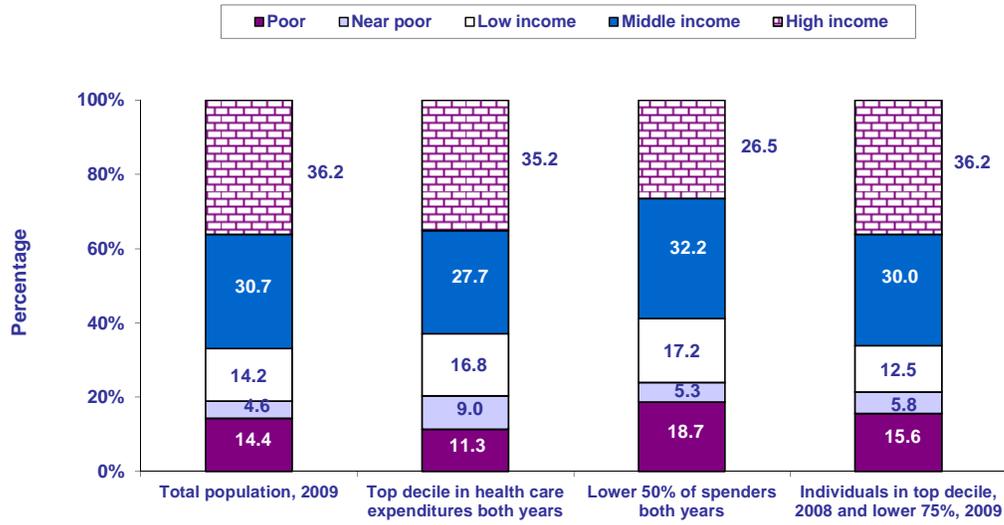
**Figure 6. Distribution of population by persistence of health care expenditures and health insurance coverage, U.S. civilian noninstitutionalized population under age 65, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)



**Figure 7. Distribution of population by persistence of health care expenditures and poverty status, in the U.S. civilian noninstitutionalized population, 2008 to 2009**



Source: Center for Financing, Access, and Cost Trends, AHRQ, Household Component of the Medical Expenditure Panel Survey, HC-121, HC-129, and HC-130 (Panel 13, 2008–2009)